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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/065,337

10/04/2002

Lawrence Miller

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11/05/2003

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EXAMINER

TRUONG, BAO Q

ART UNIT

PAPER NUMBER

2187

DATE MAILED: 11/05/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/065,337

Examiner

Bao Q. Truong

Applicant(s)

MILLER ET AL.

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 15, 18 and 19 is/are allowed.
- 6) ☒ Claim(s) 7-14, 16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The instant application having Application No. 10/065,337 has a total of 19 claims pending in the application; there are 9 independent claims and 10 dependent claims, all of which are ready for examination by the examiner.

Oath/Declaration

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in 37 C.F.R. § 1.63.

Drawings

3. The applicant's drawings submitted are acceptable for examination purposes.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 17 is directed to a computer program for executing the method steps in claim 1; a computer program is a non-statutory subject matter. Claim 17 could be directed to a statutory subject matter by directing to a computer readable media embodying the computer program for executing the method steps in claim 1.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-9, 10, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frank et al. (U.S. Patent No. 6,021,470) in view of Lomet (U.S. Patent No. 5,596,754).

Referring to claim 7, Frank teaches a method for cache management comprising:

identifying a cache miss of a cache item (see figure 3: step 302, and column 6: lines 37-53);

requesting the cache item from a master database as requesting data object from database in a mass storage (see figure 3: step 305, figure 4: element 421, and column 6: lines 37-53); and

receiving the cache item as sending data item to application program requesting for cache object (see figure 3: step 308, and column 6: lines 37-53).

Frank also teaches that when the data is being processed by one of the clients, it is locked to prevent other clients from gaining access to that data (see column 4: lines 63-66). However, Frank does not clearly teach steps of:

requesting a read lock of a named cache, the named cache including the cache item;

read locking the named cache; and

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releasing the read lock of the named cache.

Lomet teaches a method of locking used in cache management (see Abstract, column 3: lines 50-60, and column 10: Cache Management). Lomet teaches an interaction between locking and cache management, comprising steps of:

requesting a read lock of a named cache, the named cache including the cache item as a local lock manager receives a request for a read lock from a local principal (see figure 2: step 26, and column 14: lines 26-27);

read locking the named cache as the local lock manager posts the lock for local principal (see figure 2: step 34); and

releasing the read lock of the named cache as demoting the lock after cache management steps are finished (see column 15: Demoting Locks).

It would have been obvious to one having an ordinary level of skill in the art at the time the invention was made to include the above three steps of performing locking in the method taught by Frank. This would have been obvious because, when shared data is being processed by one of the clients, it should be locked to prevent other clients from gaining access to that data. Furthermore, Lomet also teaches that, in a distributed data sharing computer system, locking prevents conflicting accesses among processes/transactions, which compete for the same resource (see column 4: lines 59-67).

As to claim 8, a step of sending an indication that the named cache is read lock inherently exists when the local lock manager posts the lock for local principal.

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As to claim 9, Frank further teaches a step of sending the cache item from the master database as sending data object, which is read from database in a mass storage (see figure 3: step 305 and 308, and figure 4).

Referring to claim 10, the claimed subject matter is the same as in claim 7. The steps of:

(1) requesting a read lock of a global database, the global database including the cache item and

(2) read locking the global databases

have the same concept of locking used in cache management as in claim 7, wherein the global database is being processed by one of the clients and locking prevents conflicting accesses among clients, which compete for the same resource. Therefore, claim 10 is rejected on the same ground as claim 7.

Referring to claim 16, the claimed subject matter is the same as in claim 9. The steps of:

(1) sending in indication that the named cached is read locked from the cache manager to the local node and

(2) receiving the indication that the named cache is read locked at the local node

inherently exist. Therefore, claim 16 is rejected on the same ground as claim 9.

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8. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourne et al. (U.S. Patent No. 6,584,548 B1) in view of Lomet (U.S. Patent No. 5,596,754).

Referring to claim 11, Bourne teaches a method for cache management in a distributed data processing system (see figure 1), comprising:

determining that a predetermined event has occurred as an invalidation daemon wakes periodically to perform cache invalidation (see column 15: lines 1-3);

requesting a timestamp as the timestamp when the invalidation daemon wakes (see column 15: lines 3-5).

receiving a timestamp as an inherently existing step;

comparing the received timestamp with a previous timestamp as comparing timestamp with the latest timestamp when the record is previously processed (see column 15: lines 6-9); and

responsive to the comparison, performing a predetermined action as sending notification to cache coordinator to invalidate any fragment that has expired (see column 2: lines 58-62, and column 15: lines 13-20).

However, Bourne does not clearly teach steps of:

requesting a read lock of a named cache;

receiving an indication of a read lock of the named cache; and

releasing the read lock of the named cache.

Lomet teaches a method of locking used in cache management (see Abstract, column 3: lines 50-60, and column 10: Cache Management). Lomet teaches an interaction between locking and cache management, comprising steps of:

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requesting a read lock of a named cache as a local lock manager receives a request for a read lock from a local principal (see figure 2: step 26, and column 14: lines 26-27);

receiving an indication of a read lock of the named cache as the local lock manager posts the lock for local principal (see figure 2: step 34); and

releasing the read lock of the named cache as demoting the lock after cache management steps are finished (see column 15: Demoting Locks).

It would have been obvious to one having an ordinary level of skill in the art at the time the invention was made to include the above three steps of performing locking in the method taught by Bourne. This would have been obvious because, when shared data is being processed by one of the clients, it should be locked to prevent other clients from gaining access to that data. Furthermore, Lomet also teaches that, in a distributed data sharing computer system, locking prevents conflicting accesses among processes/transactions, which compete for the same resource (see column 4: lines 59-67).

As to claim 12, Bourne further teaches that the predetermined action comprises storing the received timestamp as the invalidation daemon remember the latest timestamp in the retrieved records (see column 15: lines 21-24).

As to claim 13 and 14, Bourne teaches that, upon determining a cache fragment has expired, the invalidation daemon notice cache coordinator to invalidate that cache fragment. Inherently, steps of requesting for an update of the cache and receiving an update for the cache will be carried out, then.

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Allowable Subject Matter

9. Claims 1-6, 15, 18, 19 are allowed.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Form PTO-892.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bao Q Truong whose telephone number is (703) 308-7090. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald A Sparks, can be reached on (703) 308-1756. The fax phone number for the organization where this application or proceeding is assigned is (703) 746-7239.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Bao Q Truong

BT

Patent Examiner

October 31, 2003

Hiep T. Nguyen
HIEP T. NGUYEN
PRIMARY EXAMINER
for

Donald Sparks

Supervisory Patent Examiner

Technology Center 2100